OIPE JC181
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PATENT & TRADEMARK OFFICE

PATENT
Attorney Docket No. ASC-043C2

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT(S):	Fitzgerald *et al.*		
SERIAL NO.:	10/625,018	GROUP NO.:	Not Yet Assigned
FILING DATE:	July 23, 2003	EXAMINER:	Not Yet Assigned
TITLE:	CMOS Inverter and Integrated Circuits Utilizing Strained Silicon Surface Channel MOSFETs		

CERTIFICATE OF FIRST CLASS MAILING UNDER 37 C.F.R. 1.8

I hereby certify that this correspondence, and any document(s) referred to as enclosed herein, is/are being deposited with the United States Postal Service as first class mail, postage prepaid, in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 31st day of December, 2003.

Emily Walsh

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith are:

1. Transmittal Form (1 pg.);
2. Supplemental Information Disclosure Statement (2 pgs.);
3. Form PTO-1449 (13 pgs.);
4. Copies of cited references B1-B38 and C1-C91; and
5. Return Receipt Postcard.

TRANSMITTAL FORM

Application Serial Number	10/625,018
Filing Date	July 23, 2003
First Named Inventor	Fitzgerald
Group Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned
Attorney Docket No.	ASC-043C2
Patent No.	Not Applicable
Issue Date	Not Applicable

ENCLOSURES *(check all that apply)*

- ☐ Fee Transmittal Form
  - ☐ Check Attached
  - ☐ Copy of Fee Transmittal Form
- ☐ Amendment/Response
  - ☐ Preliminary
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
  - ☐ Letter to Official Draftsperson including Drawings [Total Sheets _____]
- ☐ Petition for Extension of Time
- ☒ Supplemental Information Disclosure Statement
  - ☒ Form PTO-1449
  - ☒ Copies of IDS Citations (B1-B38 and C1-C91)
- ☐ Certified Copy of Priority Document(s)
- ☐ Sequence Listing submission
  - ☐ Paper Copy/CD
  - ☐ Computer Readable Copy
  - ☐ Statement verifying identity of above
- ☐ Copy of Notice to File Missing Parts of Application
- ☐ Formal Drawing(s)
- ☐ Request For Continued Examination (RCE) Transmittal
- ☐ Power of Attorney (Revocation of Prior Powers)
- ☐ Terminal Disclaimer
- ☐ Executed Declaration and Power of Attorney for Utility or Design Patent Application
- ☐ Small Entity Statement
- ☐ CD(s) for large table or computer program
- ☐ Amendment After Allowance
- ☐ Request for Certificate of Correction
  - ☐ Certificate of Correction (in duplicate)
- ☐ Notice of Appeal to Board of Patent Appeals and Interferences
- ☐ Appeal Brief (in triplicate)
- ☐ Status Inquiry
- ☒ Return Receipt Postcard
- ☒ Certificate of First Class Mailing under 37 C.F.R. 1.8
- ☐ Certificate of Facsimile Transmission under 37 C.F.R. 1.8
- ☐ Additional Enclosure(s) *(please identify below)*

CORRESPONDENCE ADDRESS

Direct all correspondence to:

Patent Administrator
Testa, Hurwitz & Thibeault, LLP
High Street Tower
125 High Street
Boston, MA 02110
Tel. No.: (617) 248-7000
Fax No.: (617) 248-7100

SIGNATURE BLOCK

Respectfully submitted,

Date: December 29, 2003
Reg. No. 50,773
Tel. No.: (617) 248-7453
Fax No.: (617) 248-7100

Mark L. Belobrodov
Attorney for Applicants
Testa, Hurwitz & Thibeault, LLP
High Street Tower
125 High Street
Boston, MA 02110

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APPLICANTS: Fitzgerald *et al.*

SERIAL NUMBER: 10/625,018 ART UNIT: Not Yet Assigned

FILING DATE: July 23, 2003 EXAMINER: Not Yet Assigned

TITLE: CMOS Inverter and Integrated Circuits Utilizing Strained Silicon Surface Channel MOSFETs

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

In accordance with the provisions of 37 C.F.R. 1.97 and 1.98, Applicants hereby make of record the patents and publications listed on the accompanying Form PTO-1449, and other information contained herein, for consideration by the Examiner in connection with the examination of the above-identified patent application. In accordance with the U.S. Patent Office's partial waiver of the requirement under 37 C.F.R. 1.98 (a)(2)(i), only copies of the foreign patent documents and non-patent publications are enclosed.

It is respectfully requested that each of the patents and publications listed on the attached Form PTO-1449, and other information contained herein, be made of record in this application.

In addition, Applicants wish to inform the Examiner about the following commonly-owned, co-pending patent applications, including all cited references and Office actions issued therein:

U.S. Serial Number	Filing Date	Inventor Name
09/599,260	06/22/2000	Wu *et al.*
09/764,177	01/17/2001	Fitzgerald
09/906,545	07/16/2001	Fitzgerald
10/216,085	08/09/2002	Fitzgerald
10/264,935	10/04/2002	Lochtefeld *et al.*

In accordance with the provisions of 37 C.F.R. 1.97, this statement is being filed before the mailing of the first Office action on the merits. Applicants believe no fees are due for this paper to be entered and considered, but the Commissioner is hereby authorized to charge Deposit Account No. 20-0531 for any required fees that may be due.

Respectfully submitted,

Date: December 29, 2003
Reg. No. 50,773

Mark L. Beloborodov
Attorney for Applicants
Testa, Hurwitz & Thibeault, LLP
High Street Tower
125 High Street
Boston, MA 02110

Tel. No.: (617) 248-7453
Fax No.: (617) 248-7100

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FORM PTO – 1449 INFORMATION DISCLOSURE STATEMENT	ATTORNEY DOCKET NO.: ASC-043C2 APPLICANT(S): Fitzgerald *et al.* SERIAL NO.: 10/625,018 FILING DATE: July 23, 2003 GROUP: Not yet assigned

U.S. PATENT DOCUMENTS

EXAM. INIT.		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	A1	4,010,045	03/01/1977	Ruehrwein			
	A2	4,710,788	12/01/1987	Dämbkes *et al.*			
	A3	4,990,979	02/05/1991	Otto			
	A4	4,997,776	03/05/1991	Harame *et al.*			
	A5	5,013,681	05/07/1991	Godbey *et al.*			
	A6	5,155,571	10/13/1992	Wang *et al.*			
	A7	5,166,084	11/24/1992	Pfiester			
	A8	5,177,583	01/05/1993	Endo *et al.*			
	A9	5,202,284	04/13/1993	Kamins *et al.*			
	A10	5,207,864	05/04/1993	Bhat *et al.*			
	A11	5,208,182	05/04/1993	Narayan *et al.*			
	A12	5,212,110	05/18/1993	Pfiester *et al.*			
	A13	5,221,413	06/22/1993	Brasen *et al.*			
	A14	5,241,197	08/31/1993	Murakami *et al.*			
	A15	5,250,445	10/05/1993	Bean *et al.*			
	A16	5,285,086	02/08/1994	Fitzgerald			
	A17	5,291,439	03/01/1994	Kauffmann *et al.*			
	A18	5,298,452	03/29/1994	Meyerson			
	A19	5,310,451	05/10/1994	Tejwani *et al.*			
	A20	5,316,958	05/31/1994	Meyerson			
	A21	5,346,848	09/13/1994	Grupen-Shemansky *et al.*			
	A22	5,374,564	12/20/1994	Bruel			
	A23	5,399,522	03/21/1995	Ohori			

EXAMINER	DATE CONSIDERED

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U.S. PATENT DOCUMENTS

EXAM. INIT.		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	A24	5,413,679	05/09/1995	Godbey			
	A25	5,426,069	06/20/1995	Selvakumar *et al.*			
	A26	5,426,316	06/20/1995	Mohammad			
	A27	5,442,205	08/15/1995	Brasen *et al.*			
	A28	5,461,243	10/24/1995	Ek *et al.*			
	A29	5,461,250	10/24/1995	Burghartz *et al.*			
	A30	5,462,883	10/31/1995	Dennard *et al.*			
	A31	5,476,813	12/19/1995	Naruse			
	A32	5,479,033	12/26/1995	Baca *et al.*			
	A33	5,484,664	01/16/1996	Kitahara *et al.*			
	A34	5,523,243	06/04/1996	Mohammad			
	A35	5,523,592	06/04/1996	Nakagawa *et al.*			
	A36	5,534,713	07/09/1996	Ismail *et al.*			
	A37	5,536,361	07/16/1996	Kondo *et al.*			
	A38	5,540,785	07/30/1996	Dennard *et al.*			
	A39	5,596,527	01/21/1997	Tomioka *et al.*			
	A40	5,617,351	04/01/1997	Bertin *et al.*			
	A41	5,630,905	05/20/1997	Lynch *et al.*			
	A42	5,659,187	08/19/1997	Legoues *et al.*			
	A43	5,683,934	11/04/1997	Candelaria			
	A44	5,698,869	12/16/1997	Yoshimi *et al.*			
	A45	5,714,777	02/03/1998	Ismail *et al.*			
	A46	5,728,623	03/17/1998	Mori			
	A47	5,739,567	04/14/1998	Wong			

EXAMINER	DATE CONSIDERED

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EXAM. INIT.		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	A48	5,759,898	06/02/1998	Ek *et al.*			
	A49	5,786,612	07/28/1998	Otani *et al.*			
	A50	5,792,679	08/11/1998	Nakato			
	A51	5,808,344	09/15/1998	Ismail *et al.*			
	A52	5,847,419	12/08/1998	Imai *et al.*			
	A53	5,877,070	03/02/1999	Goesele *et al.*			
	A54	5,891,769	04/06/1999	Liaw *et al.*			
	A55	5,906,708	05/25/1999	Robinson *et al.*			
	A56	5,912,479	06/15/1999	Mori *et al.*			
	A57	5,943,560	08/24/1999	Chang *et al.*			
	A58	5,963,817	10/05/1999	Chu *et al.*			
	A59	5,966,622	10/12/1999	Levine *et al.*			
	A60	5,998,807	12/07/1999	Lustig *et al.*			
	A61	6,033,974	03/07/2000	Henley *et al.*			
	A62	6,033,995	03/07/2000	Muller.			
	A63	6,058,044	05/02/2000	Sugiura *et al.*			
	A64	6,074,919	06/13/2000	Gardner *et al.*			
	A65	6,096,590	08/01/2000	Chan *et al.*			
	A66	6,103,559	08/15/2000	Gardner *et al.*			
	A67	6,107,653	08/22/2000	Fitzgerald			
	A68	6,117,750	09/12/2000	Bensahel *et al.*			
	A69	6,130,453	10/10/2000	Mei *et al.*			
	A70	6,133,799	10/17/2000	Favors *et al.*			
	A71	6,140,687	10/31/2000	Shimomura *et al.*			

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U.S. PATENT DOCUMENTS

EXAM. INIT.		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	A72	6,143,636	11/07/2000	Forbes *et al.*			
	A73	6,153,495	11/28/2000	Kub *et al.*			
	A74	6,154,475	11/28/2000	Soref *et al.*			
	A75	6,160,303	12/12/2000	Fattaruso			
	A76	6,162,688	12/19/2000	Gardner *et al.*			
	A77	6,184,111	02/06/2001	Henley *et al.*			
	A78	6,191,007	02/20/2001	Matsui *et al.*			
	A79	6,191,432	02/20/2001	Sugiyama *et al.*			
	A80	6,194,722	02/27/2001	Fiorini *et al.*			
	A81	6,207,977	03/27/2001	Augusto			
	A82	6,210,988	04/03/2001	Howe *et al.*			
	A83	6,218,677	04/17/2001	Broekaert			
	A84	6,232,138	05/15/2001	Fitzgerald *et al.*			
	A85	6,235,567	05/22/2001	Huang			
	A86	6,242,324	06/05/2001	Kub *et al.*			
	A87	6,251,755	06/26/2001	Furukawa *et al.*			
	A88	6,261,929	07/17/2001	Gehrke *et al.*			
	A89	6,271,551	08/07/2001	Schmitz *et al.*			
	A90	6,271,726	08/07/2001	Fransis *et al.*			
	A91	6,291,321	09/18/2001	Fitzgerald			
	A92	6,313,016	11/06/2001	Kibbel *et al.*			
	A93	6,316,301	11/13/2001	Kant			
	A94	6,323,108	11/27/2001	Kub *et al.*			

EXAMINER	DATE CONSIDERED

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FORM PTO – 1449 INFORMATION DISCLOSURE STATEMENT	ATTORNEY DOCKET NO.: ASC-043C2 APPLICANT(S): Fitzgerald *et al.* SERIAL NO.: 10/625,018 FILING DATE: July 23, 2003 GROUP: Not yet assigned

U.S. PATENT DOCUMENTS

EXAM. INIT.		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	A95	6,329,063	12/11/2001	Lo *et al.*			
	A96	6,335,546	01/01/2002	Tsuda *et al.*			
	A97	6,339,232	01/15/2002	Takagi			
	A98	6,350,993	02/26/2002	Chu *et al.*			
	A99	6,368,733	04/09/2002	Nishinaga			
	A100	6,372,356	04/16/2002	Thornton *et al.*			
	A101	6,399,970	06/04/2002	Kubo *et al.*			
	A102	6,403,975	06/11/2002	Brunner *et al.*			
	A103	6,407,406	06/18/2002	Tezuka			
	A104	6,425,951	07/30/2002	Chu *et al.*			
	A105	6,429,061	08/06/2002	Rim			
	A106	6,521,041	02/18/2003	Wu *et al.*			
	A107	6,555,839	04/29/2003	Fitzgerald			
	A108	6,602,613	08/05/2003	Fitzgerald			01/17/2001
	A109	2001/0003364	06/14/2001	Sugawara *et al.*			
	A110	2002/0100942	08/01/2001	Fitzgerald *et al.*			
	A111	2002/0123197	09/05/2002	Fitzgerald *et al.*			
	A112	2002/0125471	09/12/2002	Fitzgerald *et al.*			
	A113	2002/0140031	10/03/2002	Rim			

FOREIGN PATENT DOCUMENTS

EXAM. INIT.		DOCUMENT NUMBER	DATE	COUNTRY CODE	CLASS	SUB CLASS	FILING DATE	ABSTRACT ONLY	ENGLISH LANG (Y/N)
	B1	41 01 167	07/23/1992	DE				N	Abstract
	B2	0 514 018	11/19/1992	EP				N	Y
	B3	0 587 520	03/16/1994	EP				N	Y

EXAMINER	DATE CONSIDERED

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EXAM. INIT.		DOCUMENT NUMBER	DATE	COUNTRY CODE	CLASS	SUB CLASS	FILING DATE	ABSTRACT ONLY	ENGLISH LANG (Y/N)
	B4	0 683 522	11/22/1995	EP				N	Y
	B5	0 828 296	03/11/1998	EP				N	Y
	B6	0 829 908	03/18/1998	EP				N	Y
	B7	0 838 858	04/29/1998	EP				N	Abstract
	B8	1 020 900	07/19/2000	EP				N	Y
	B9	1 174 928	01/23/2002	EP				N	Y
	B10	2 342 777	04/19/2000	GB				Y	Y
	B11	5-166724	07/02/1993	JP				N	Abstract
	B12	6-177046	06/24/1994	JP				N	Abstract
	B13	6-252046	09/09/1994	JP				Y	Y
	B14	7-94420	04/07/1995	JP				N	N
	B15	7-240372	09/12/1995	JP				N	Abstract
	B16	10-270685	10/09/1998	JP				N	Y
	B17	2000-021783	01/21/2000	JP				N	Y
	B18	2000-031491	01/28/2000	JP				N	Y
	B19	2001-319935	11/16/2001	JP				N	Y
	B20	2002-076334	03/15/2002	JP				N	Y
	B21	2002-164520	06/07/2002	JP				N	Y
	B22	2002-289533	10/04/2002	JP				N	Y
	B23	98/59365	12/30/1998	WO				N	Y
	B24	99/53539	10/21/1999	WO				N	Y
	B25	00/48239	08/17/2000	WO				N	Y
	B26	00/54338	09/14/2000	WO				N	Y
	B27	01/022482	03/29/2001	WO				N	Y
	B28	01/54202	07/26/2001	WO				N	Y
	B29	01/93338	12/06/2001	WO				N	Y

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	B30	01/99169	12/27/2001	WO				N	Y
	B31	02/13262	02/14/2002	WO				N	Y
	B32	02/15244	02/21/2002	WO				N	Y
	B33	02/27783	04/04/2002	WO				N	Y
	B34	02/47168	06/13/2002	WO				N	Y
	B35	02/071488	09/12/2002	WO				N	Y
	B36	02/071491	09/12/2002	WO				N	Y
	B37	02/071495	09/12/2002	WO				N	Y
	B38	02/082514	10/17/2002	WO				N	Y

OTHER ART, JOURNAL ARTICLES, ETC.

EXAM. INIT.		OTHER DOCUMENTS: (Including Author, Title, Date, Relevant Pages, Place of Publication)
	C1	Armstrong *et al.*, "Design of Si/SiGe Heterojunction Complementary Metal-Oxide-Semiconductor Transistors," IEDM Technical Digest (1995 International Electron Devices Meeting), pp. 761-764.
	C2	Armstrong, "Technology for SiGe Heterostructure-Based CMOS Devices," PhD Thesis, Massachusetts Institute of Technology, 1999, pp. 1-154.
	C3	Augusto *et al.*, "Proposal for a New Process Flow for the Fabrication of Silicon-Based Complementary MOD-MOSFETs without Ion Implantation," Thin Solid Films, Vol. 294, No. 1-2 (February 15, 1997), pp. 254-258.
	C4	Barradas *et al.*, "RBS analysis of MBE-grown SiGe/(001) Si heterostructures with thin, high Ge content SiGe channels for HMOS transistors," Modern Physics Letters B, Vol. 15 (2001), abstract.
	C5	Borenstein *et al.*, "A New Ultra-Hard Etch-Stop Layer for High Precision Micromachining," Proceedings of the 1999 12th IEEE International Conference on Micro Electro Mechanical Systems (MEMs) (January 17-21, 1999), pp. 205-210.
	C6	Bouillon *et al.*, "Search for the optimal channel architecture for 0.18/0.12 μm bulk CMOS experimental study," IEEE (1996), pp. 21.2.1-21.2.4.

EXAMINER	DATE CONSIDERED

OIPE JC101 DEC 31 2003 PATENT & TRADEMARK OFFICE

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OTHER ART, JOURNAL ARTICLES, ETC.

EXAM. INIT.		OTHER DOCUMENTS: (Including Author, Title, Date, Relevant Pages, Place of Publication)
	C7	Bruel *et al.*, "®SMART CUT: A Promising New SOI Material Technology," Proceedings of the 1995 IEEE International SOI Conference (October 1995), pp. 178-179.
	C8	Bruel, "Silicon on Insulator Material Technology," Electronic Letters, Vol. 13, No. 14 (July 6, 1995), pp. 1201-1202.
	C9	Bufler *et al.*, "Hole transport in strained Si1-xGex alloys on Si1-yGey substrates," Journal of Applied Physics, Vol. 84, No. 10 (November 15, 1998), pp. 5597-5602.
	C10	Burghartz *et al.*, "Microwave Inductors and Capacitors in Standard Multilevel Interconnect Silicon Technology," IEEE Transactions on Microwave Theory and Techniques, Vol. 44, No. 1 (January 1996), pp. 100-104.
	C11	Canaperi *et al.*, "Preparation of a relaxed Si-Ge layer on an insulator in fabricating high-speed semiconductor devices with strained epitaxial films," International Business Machines Corporation, USA (2002), abstract.
	C12	Carlin *et al.*, "High Efficiency GaAs-on-Si Solar Cells with High Voc using Graded Gesi Buffers," IEEE – 2000 (2000), pp. 1006-1011.
	C13	Chang *et al.*, "Selective Etching of SiGe/Si Heterostructures," Journal of the Electrochemical Society, No. 1 (January 1991), pp. 202-204.
	C14	Cheng *et al.*, "Electron Mobility Enhancement in Strained-Si n-MOSFETs Fabricated on SiGe-on-Insulator (SGOI) Substrates," IEEE Electron Device Letters, Vol. 22, No. 7 (July 2001), pp. 321-323.
	C15	Cheng *et al.*, "Relaxed Silicon-Germanium on Insulator Substrate by Layer Transfer," Journal of Electronic Materials, Vol. 30, No. 12 (2001), pp. L37-L39.
	C16	Cullis *et al.*, "Growth ripples upon strained SiGe epitaxial layers on Si and misfit dislocation interactions," Journal of Vacuum Science and Technology A, Vol. 12, No. 4 (July/August 1994), pp. 1924-1931.
	C17	Currie *et al.*, "Carrier mobilities and process stability of strained Si n- and p-MOSFETs on SiGe virtual substrates," Journal of Vacuum Science and Technology B, Vol. 19, No. 6 (Nov/Dec 2001), pp. 2268-2279.
	C18	Currie *et al.*, "Controlling Threading Dislocation Densities in Ge on Si Using Graded SiGe Layers and Chemical-Mechanical Polishing," Applied Physics Letters, Vol. 72, Issue 14 (04/06/98), pp. 1718-1720.
	C19	Eaglesham *et al.*, "Dislocation-Free Stranski-Krastanow Growth of Ge on Si(100)," Physical Review Letters, Vol. 64, No. 16 (April 16, 1990), pp. 1943-1946.
	C20	Feijoo *et al.*, "Epitaxial Si-Ge Etch Stop Layers with Ethylene Diamine Pyrocatechol for Bonded and Etchback Silicon-on-Insulator," Journal of Electronic Materials, Vol. 23, No. 6 (June 1994), pp. 493-496.
	C21	Fischetti *et al.*, "Band structure, deformation potentials, and carrier mobility in strained Si, Ge, and SiGe alloys," Journal of Applied Physics, Vol. 80, No. 4 (August 15, 1996), pp. 2234-2252.
	C22	Fischetti, "Long-range Coulomb interactions in small Si devices. Part II. Effective electronmobility in thin-oxide structures," Journal of Applied Physics, Vol. 89, No. 2 (January 15, 2001), pp. 1232-1250.

EXAMINER	DATE CONSIDERED

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OTHER ART, JOURNAL ARTICLES, ETC.

EXAM. INIT.		OTHER DOCUMENTS: (Including Author, Title, Date, Relevant Pages, Place of Publication)
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